

SECTION V-C - TV BROADCAST ENGINEERING DATA (Page 4)

16. Attach as an Exhibit a map (*Sectional Aeronautical Chart or equivalent*) which shows clearly, legibly and accurately, and with the original printed latitude and longitude markings and a scale of distance in kilometers.

Exhibit No.  
ENG

- (a) The proposed transmitter location, and the radials along which profile graphs have been prepared;  
(b) The City Grade, Grade A and Grade B predicted contours; and  
(c) The legal boundaries of the principal community to be served.

17. Specify area in square kilometers (1 sq. mi. = 259 sq. km.) and population (*latest census*) within the predicted Grade B contour.

Area 10,039 sq. km. Population 415,689

18. For an application involving an auxiliary facility only, attach as an Exhibit a map (*Sectional Aeronautical Chart or equivalent*) that shows clearly, legibly, and accurately, and with latitude and longitude markings and a scale of distance in kilometers.

Exhibit No.  
DNA

- (a) The proposed auxiliary Grade B contour and

SECTION V-C - TV BROADCAST ENGINEERING DATA (Page 5)

20. Environmental Statement (See 47 C.F.R. Section 1.1301 et seq.)

Would a Commission grant of this application come within 47 C.F.R. Section 1.1307, such that it may have a significant environmental impact?

☐ Yes ☒ No

If you answer Yes, submit as an Exhibit an Environmental Assessment required by 47 C.F.R. Section 1.1311.


Exhibit No.

If No, explain briefly why not.

See Engineering

CERTIFICATION

I certify that I have prepared this Section of this application on behalf of the applicant, and that after such preparation, I have examined the foregoing and found it to be accurate and true to the best of my knowledge and belief.

Name (Typed or Printed)	Relationship to Applicant (e.g., Consulting Engineer)
Melvyn Lieberman	Consulting Engineer
Signature	Address (Include ZIP Code)
	Rubin, Bednarek & Associates, Inc. 1350 Connecticut Avenue, NW - Suite 610 Washington, DC 20036
Date	Telephone No. (Include Area Code)
January 13, 1992	( 202 ) 296-9380

**RUBIN, BEDNAREK & ASSOCIATES, INC.**

CONSULTING TELECOMMUNICATIONS ENGINEERS

1350 CONNECTICUT AVENUE, NW - SUITE 810

WASHINGTON, DC 20036

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New - Jacksonville, N.C.

**ENGINEERING STATEMENT**

**I ABSTRACT**

This engineering report supports the application of CHARLES FITZGERALD requesting a construction permit authorizing the installation of a new UHF television broadcast station at Jacksonville, North Carolina.

This application proposes the employment of UHF television channel 35 (596-602 mHz) with an effective radiated power of 2000 kilowatts visual and 200 kilowatts aural from a directional antenna having a height of 301 meters above average terrain.

This application is mutually exclusive with the application of LOCAL TV ASSOCIATES (BPCT-911106KF) seeking the same channel facilities.

This engineering report complies, in all respects, with pertinent sections of the FCC rules. All paragraphs fully answered in the attached Section V-C of FCC form 301 will not be repeated in the body of this engineering report.

**II RESPONSE TO FCC FORM 301**

**Paragraph 8:**

Exhibit I is a vertical plan sketch of the proposed antenna system.

The proposed antenna will be side mounted on an existing 309 meter uniform cross section, vertical steel, guyed tower located on a tract of land on the Holly Ridge - Sneads Ferry Road, Holly Ridge, North Carolina. With the addition of the instant proposed radiator, the overall height of the structure will not be altered.

**Paragraph 10:**

The proposed radiator is an SWR Inc. SWR-SMP32EC\35 (directional) with an overall power gain of 52.06 in the maximum direction. Exhibit II is an antenna specification summary from data furnished by the manufacturer. Exhibits III-A and III-B are relative field patterns in both

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Relative Field : Directly from Exhibit III-A

Depression Angle :  $(0.0277)\sqrt{\text{HAAT}}$

Antenna Gain :  $20 \log (\text{relative field}) + \text{Vertical Power Gain} + \text{Maximum Horizontal Gain}$

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**II FURTHER RESPONSE TO SECTION V-C OF FCC FORM 301 (CONT'D)**

Paragraph 12:

The main studio will be located in Jacksonville, North Carolina, at a site to be determined. Programming will be maintained to the transmitter site via a suitable microwave link. Application for such facilities will be made independently at the appropriate time.

Paragraph 13:

In preparing this engineering report, consideration was given to pertinent co-channel and adjacent channel assignments with which this application could be in conflict. Exhibit V is a tabulation of these assignments and demonstrates the instant application is in complete accord with the provisions of Section §73.610 of the rules.

Paragraph 14:

The instant application proposes the sharing of tower space with WKOQ-FM operating on FM channel 254C1 at 100 kilowatts ERP. It is expected that this sharing of tower space will not have any deleterious effect on the operations of these broadcast facilities.

There are no other known broadcast facilities, or established commercial or governmental receiving stations within 60 meters of the instant proposed site. Should, however, any objectionable interference be created as a result of the instant proposed facility sharing space with WKOQ-FM, the applicant will, under the provision set forth in the rules, remedy the situation at his expense.

Paragraph 15:

Exhibit VI is included to satisfy the requirements of this paragraph.

Paragraph 16:

The data required by this paragraph was calculated in accordance with Section §73.684 of the FCC rules.

The terrain elevation data for the eight cardinal radials and N 10° E was obtained with a computer program that reads 30 second point data from the National Geophysical Data Center.

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**II FURTHER RESPONSE TO SECTION V-C OF FCC FORM 301 (CONT'D)**

Paragraph 16 (cont'd):

Employing this data, contours were predicted in accordance with Section §73.684 of the rules using a computer program that accesses a data base containing the pertinent FCC curves.

Paragraph 17:

The land area within the predicted Grade B (64 dBu) contour was determined using computer based methodology. Only that portion of the contour covering land was computed.

The population total within the Grade B (64 dBu) contour was computed using software that make use of the official 1990 U.S. Bureau of Census data (post 7/15/91). This data is available in the data base as census blocks which are the smallest census entity with an average population per block of less than 50 persons. Associated with each census block is a set of reference coordinates as determined by the census bureau which is referred to as the "centroid". Where the "centroid" of a census block lies within the predicted 64 dBu contour, the entire census block is included in the population total. Conversely, where the "centroid" is outside the contour, the entire census block is not included in the population total.

Paragraph 19:

The radials and predicted contours required by this paragraph are shown on the attached FCC Form 301 as well as Exhibit VIII. In Exhibit VIII, however, the data is tabulated for every 10° of arc as well as the ERP in the pertinent directions

Contours were predicted in accordance with Section §73.684 of the FCC rules.

Paragraph 20:

The instant application proposes the sharing of tower space with WKOO-FM. As such, no environmental changes are anticipated.

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Paragraph 20 (cont'd):

The instant proposed television facility will comply with the radio frequency protection guidelines contained in the ANSI C95.1-1982 standard (American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz) with respect to all areas accessible to workers or the general public.

**III STATEMENT WITH RESPECT TO EMERGENCY POWER**

This application proposes the installation and maintenance of auxiliary power at the transmitter and studio location. The instant proposed equipment will be of sufficient capacity to power the transmitter and studio in the event of a power failure at one or both locations.

**IV METHODS EMPLOYED**

All data and computations contained herein or upon which this engineering report is based are in complete accord with the pertinent requirements of the FCC rules unless otherwise specifically so stated.

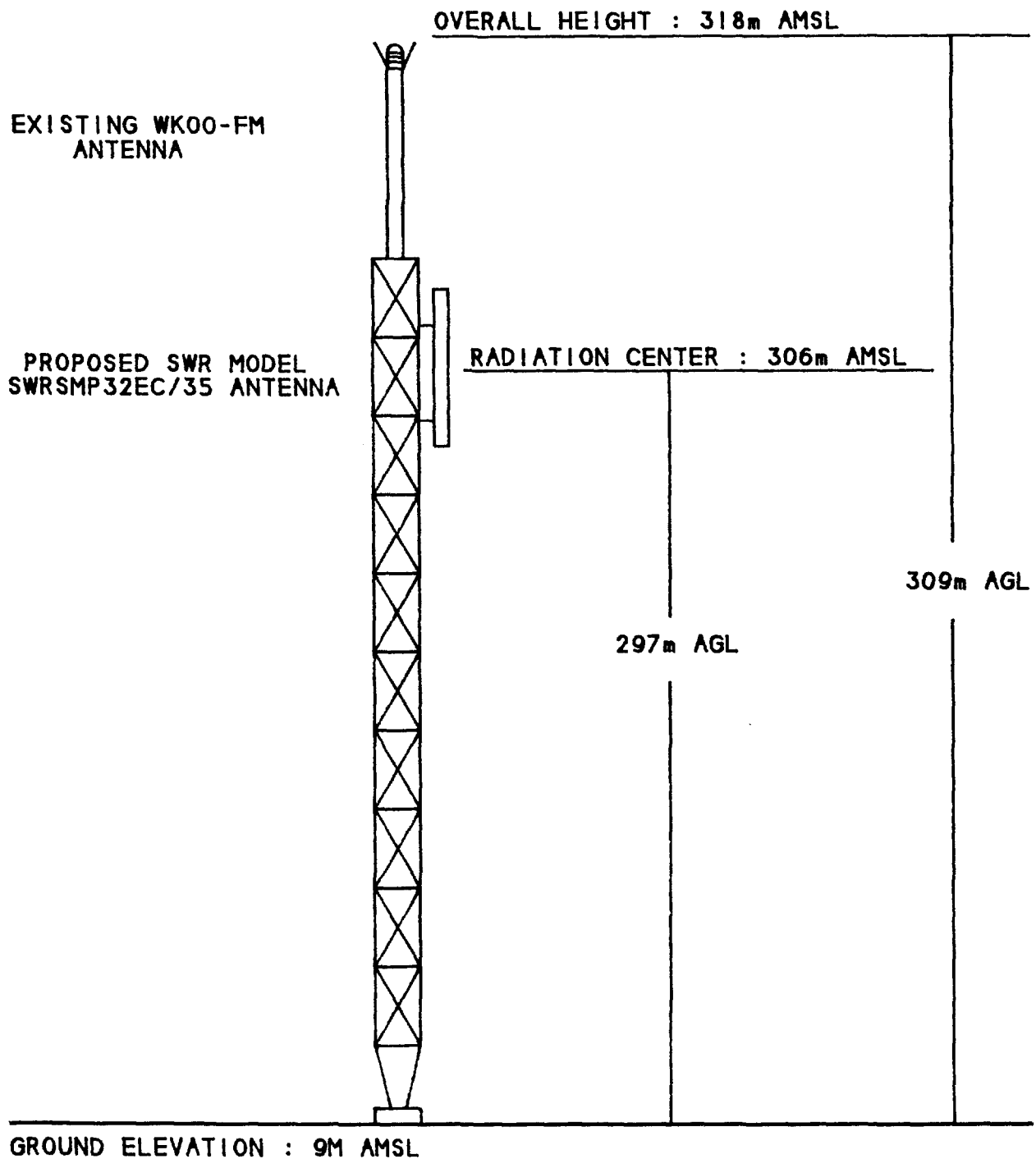


EXHIBIT 1

CHARLES FITZGERALD - JACKSONVILLE, NC  
VERTICAL PLAN SKETCH OF PROPOSED ANTENNA  
AND EXISTING SUPPORTING STRUCTURE

NOTE :  
NOT DRAWN TO SCALE

RUBIN, BEDNAREK & ASSOCIATES, INC.

JANUARY 1992



## ANTENNA SPECIFICATIONS SUMMARY

**Proposal No. 11092      Date: 1/10/92**

**Revision No. 0.**

Station: Channel: 35

**Antenna type:SWRSMP32EC/35**

Customer: ML      Location: JACKSONVILLE NC.

## ELECTRICAL SPECIFICATIONS

Elevation power gain

Main lobe(RMS gain)	32.00 (15.05 db)
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Elevation Power gain Horizontal	24.84 (13.95 db)
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Horizontal gain Main Lobe 1.627 (2.114 db)

Directional gain 52.06 (17.165 db)

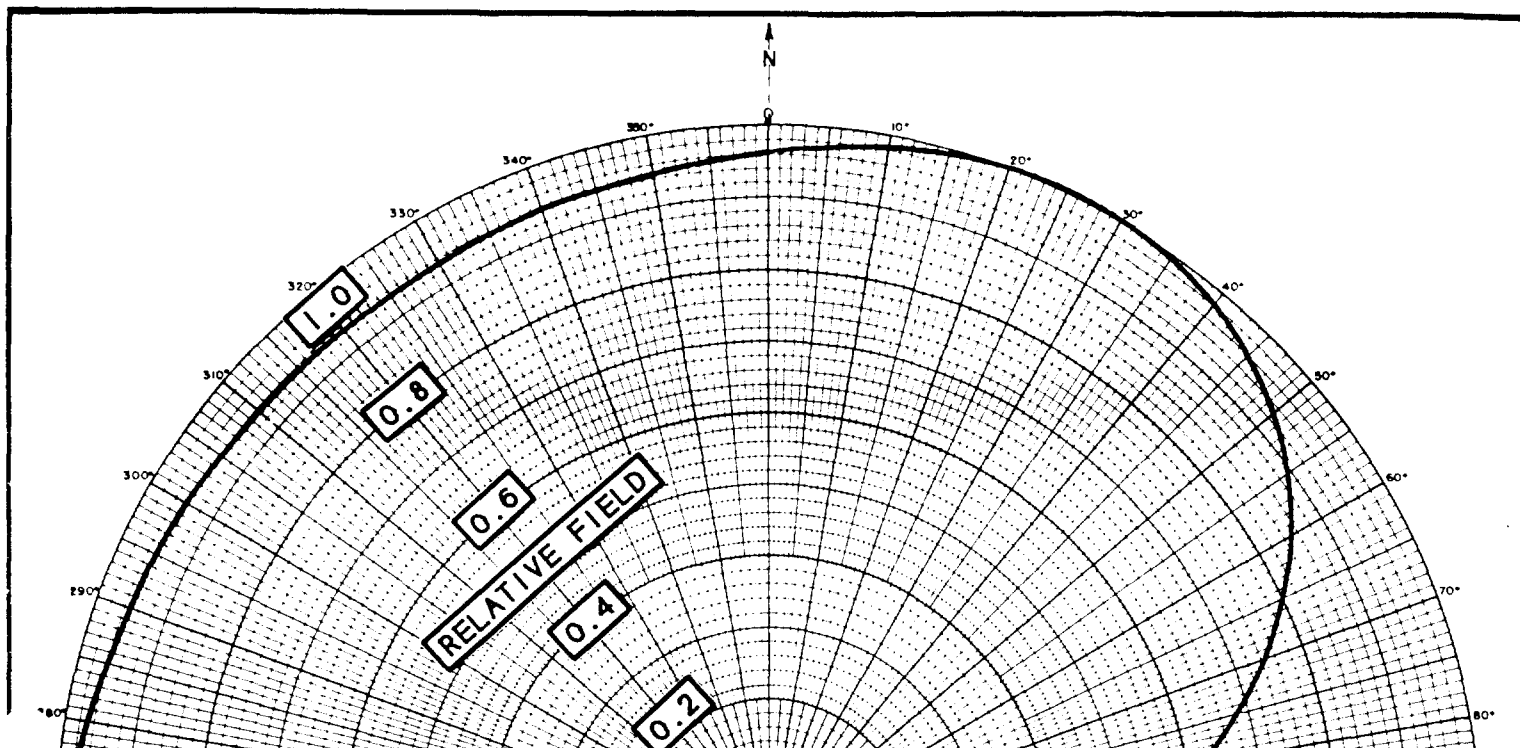
Peak power capability(20% Aural) 40 KW

**Beam Tilt**                                 **- .6 DEGREE**

Elevation Pattern Dwg No. 11092-1

Azimuth Pattern Dwg No. 11092-2

Input Line Size	AS REQUIRED
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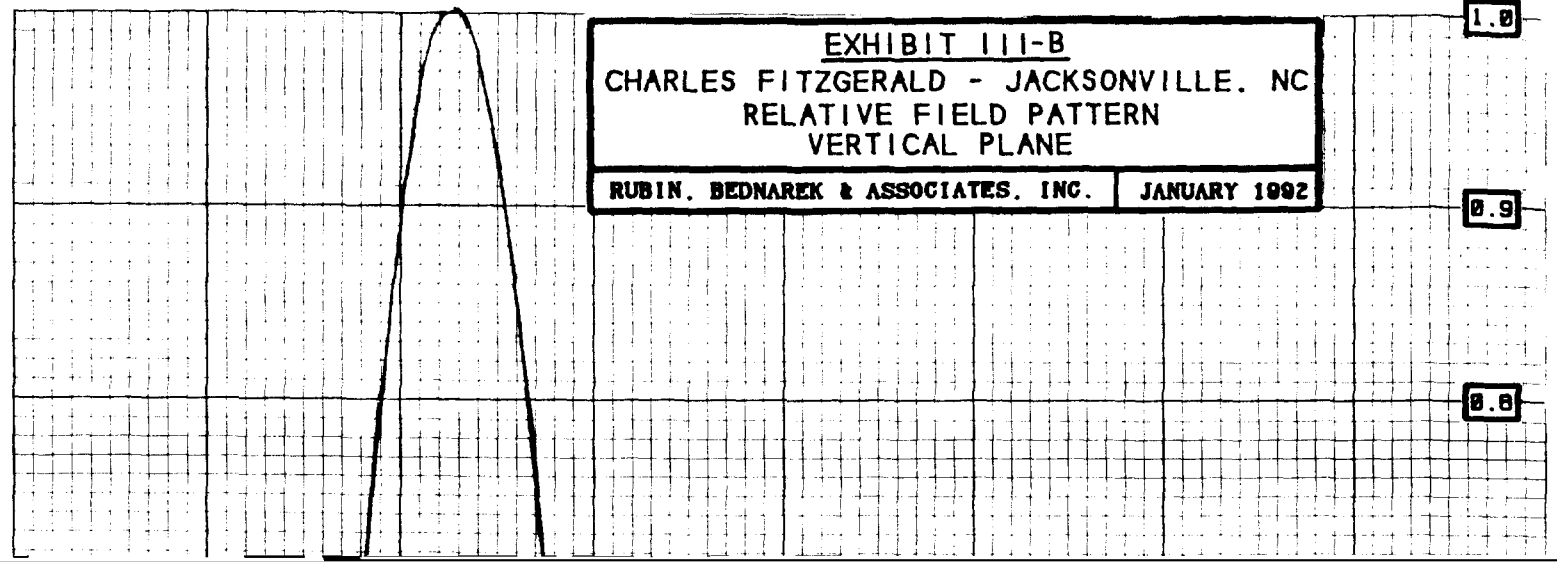
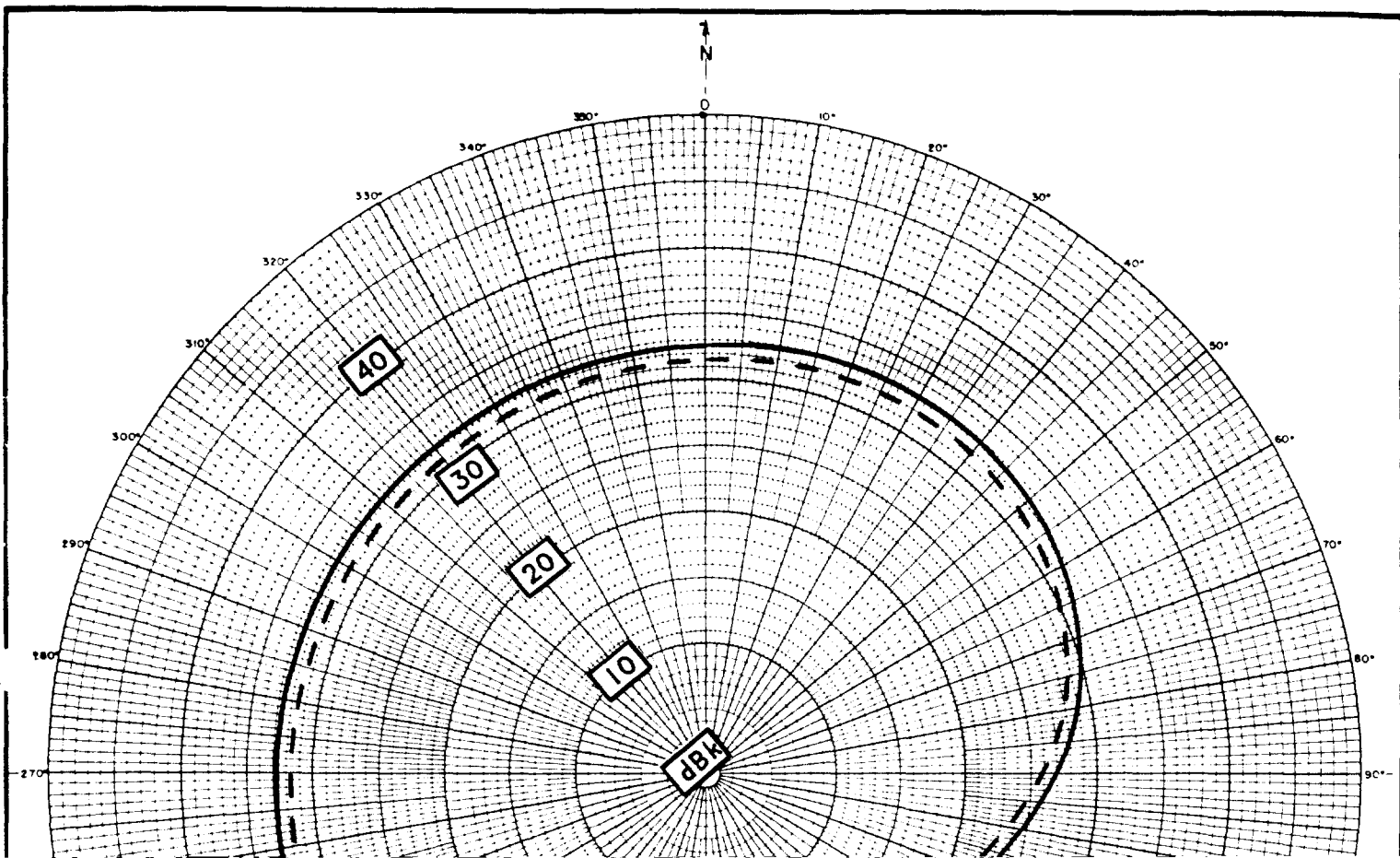
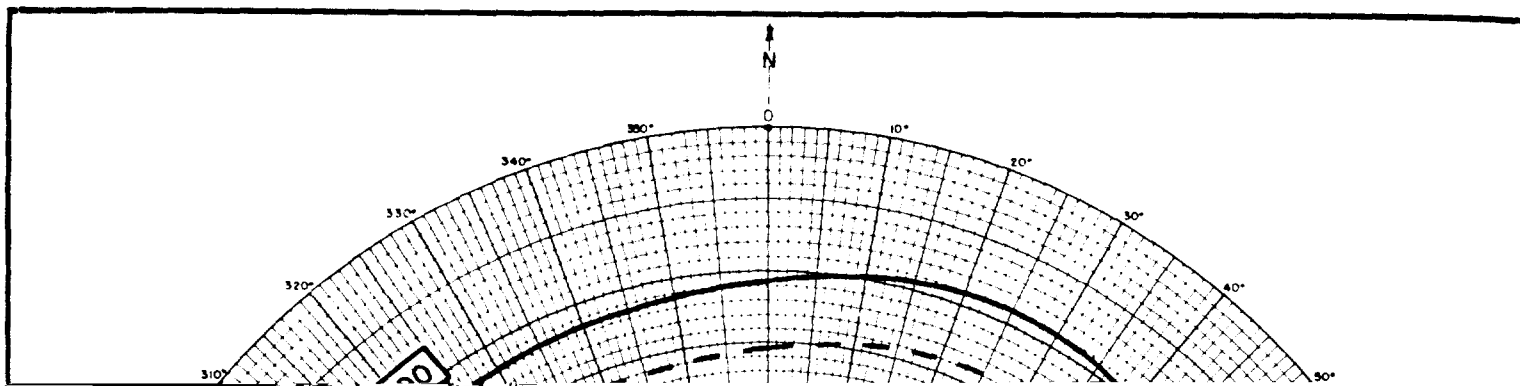


EXHIBIT III-B  
CHARLES FITZGERALD - JACKSONVILLE, NC  
RELATIVE FIELD PATTERN  
VERTICAL PLANE  
RUBIN, BEDNAREK & ASSOCIATES, INC. JANUARY 1992





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**EXHIBIT IV**

Calculated Radiation Values

Relative

Calculated Radiation

Calculated Radiation

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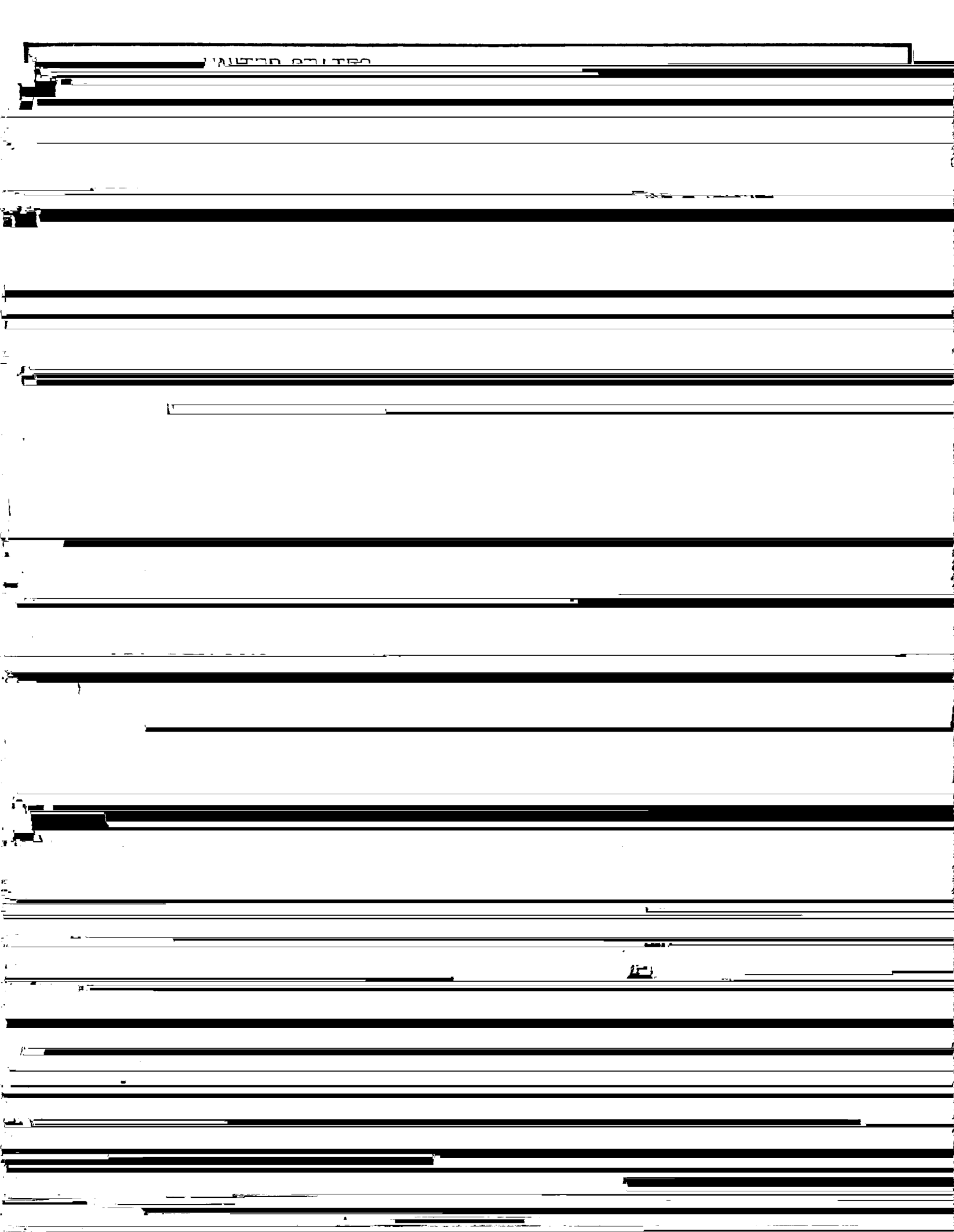
New - Jacksonville, N.C.

**EXHIBIT V**

**TV ALLOCATION STUDY**

Channel 35z

Call City	File	- number State	Chan Status	ERP HAAT	Latitude Longitude	Bear Zone	Dist Clear	Req'd (km)
JRS FLORENCE	BPCT	870331L1 SC	21z CP	5000 1919	33 55 14.0 79 32 8.0	251.9 2	199.11 103.41	95.7 Comment
WRDCTV DURHAM	BLCT	910116KE NC	28+ LIC	5000 1919	35 40 35.0 78 32 9.0	324.4 2	162.28 66.58	95.7 Comment
LUMBERTON		NC	* 31z ALC		34 37 24.0 79 0 12.0	276.4 2	139.78 108.38	31.4
RALEIGH		NC	* 34- ALC		35 46 38.0 78 38 21.0	324.1 2	176.84 89.14	87.7
NEW JACKSONVILLE	BPCT	911106KF! NC	35z APP	1400 833	35 2 27.0 77 21 11.0	11.4 2	61.93 -218.87	280.8 SHORT
JACKSONVILLE		NC	35z ALC		34 37 26.0 77 49 58.0	294.7 2	34.75 -246.05	280.8 SHORT
WRLKTV COLUMBIA	BLET	801212KF SC	* 35+ LIC	617 1030	34 7 7.0 80 56 12.0	263.5 2	320.15 39.35	280.8
WRLHTV RICHMOND	BLCT	870930LA VA	35+ LIC	2588 1259	37 30 22.0 77 42 3.0	356.8 1	334.77 86.17	248.6
WUNPTV ROANOKE RAPIDS	BLET	861120KI NC	* 36- LIC	1470 1206	36 17 28.0 77 50 10.0	351.1 2	201.88 114.18	87.7
WGTJ GREENVILLE	BPCT	850426KM NC	38+ CP	5000 474	35 27 25.0 77 12 21.0	13.4 2	109.91 78.51	31.4 Comment
WUNJTV WILMINGTON	BLET	891220KE NC	* 39- LIC	4500 1813	34 7 51.0 78 11 16.0	238.1 2	75.94 44.54	31.4
WGSE MYRTLE BEACH	BLCT	840713KE SC	43+ LIC	156 600	33 50 10.0 78 51 8.0	240.1 2	145.39 113.99	31.4
NEW RALEIGH	BPCT	841005KF NC	50+ CP	5000 1474	35 42 55.0 78 49 4.0	318.7 2	181.80 61.90	119.9 Comment





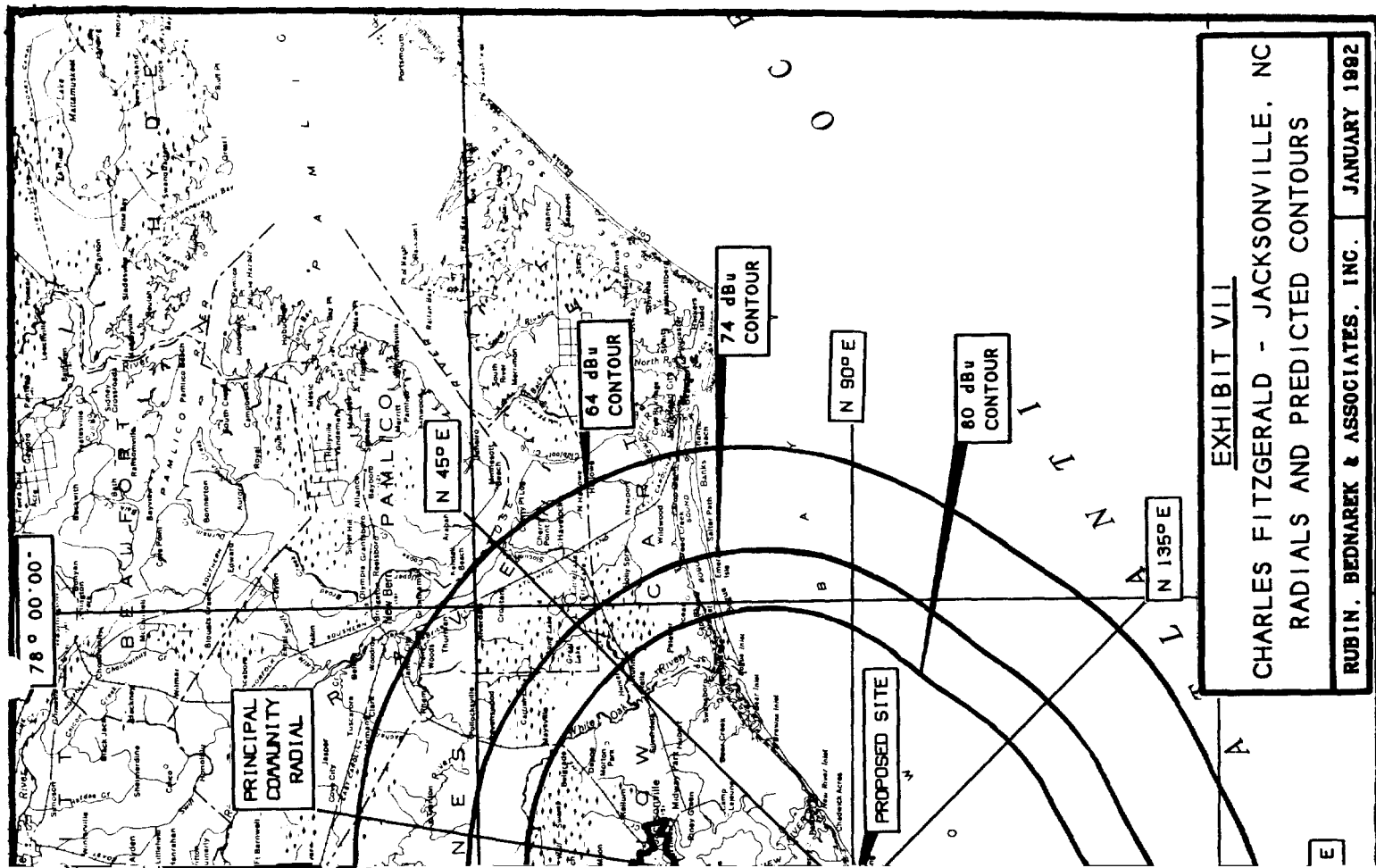


EXHIBIT VII

CHARLES FITZGERALD - JACKSONVILLE, NC  
RADIALS AND PREDICTED CONTOURS

RUBIN, BEDNAREK & ASSOCIATES, INC. JANUARY 1982

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**EXHIBIT VIII - Page 1**

Predicted Distances To Contours

<u>Azimuth</u> <u>(degrees)</u>	<u>HAAT</u> <u>(meters)</u>	<u>ERP</u> <u>(kilowatts)</u>	<u>f(50,50) 80 dBu</u> <u>contour</u>	<u>f(50,50) 74 dBu</u> <u>contour</u>	<u>f(50,50) 64 dBu</u> <u>contour</u>
0.00	292	1850.8880	48.6	57.4	73.2
10.0	295	1928.6480	49.0	57.9	73.9
20.0	300	1996.0020	49.5	58.4	74.6
30.0	302	2000.0000	49.6	58.5	74.8
40.0	303	1916.8820	49.4	58.3	74.5
45.0	302	1843.2000	49.1	58.0	74.1
50.0	301	1722.3680	48.6	57.5	73.5
60.0	304	1438.2080	47.6	56.5	72.4
70.0	306	1095.2000	46.0	54.9	70.5
80.0	306	763.8479	43.7	52.6	67.9
90.0	306	476.2880	40.7	49.5	64.6
100.0	306	281.2500	37.4	46.1	61.1
110.0	306	177.6080	34.5	43.2	58.0
120.0	306	138.3380	33.0	41.6	56.4
130.0	306	135.2000	32.8	41.5	56.3
135.0	306	136.2420	32.9	41.5	56.3
140.0	306	138.3380	33.0	41.6	56.4
150.0	306	135.2000	32.8	41.5	56.3
160.0	306	138.3380	33.0	41.6	56.4
170.0	306	177.6080	34.5	43.2	58.0
180.0	306	281.2500	37.4	46.1	61.1
190.0	306	476.2880	40.7	49.5	64.6
200.0	306	763.8479	43.7	52.6	67.9
210.0	306	1095.2000	46.0	54.9	70.5
220.0	306	1438.2080	47.7	56.7	72.6
225.0	306	1602.0500	48.4	57.3	73.4
230.0	304	1722.3680	48.8	57.7	73.8
240.0	301	1916.8820	49.3	58.2	74.4
250.0	296	2000.0000	49.3	58.2	74.3
260.0	296	1996.0020	49.3	58.2	74.2

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New - Jacksonville, N.C.

**EXHIBIT VIII - Page 2**

Predicted Distances To Contours

<u>Azimuth</u> <u>(degrees)</u>	<u>HAAT</u> <u>(meters)</u>	<u>ERP</u> <u>(kilowatts)</u>	<u>f(50,50) 80 dBu</u> <u>contour</u>	<u>f(50,50) 74 dBu</u> <u>contour</u>	<u>f(50,50) 64 dBu</u> <u>contour</u>
270.0	296	1928.6480	49.1	58.0	74.0
280.0	296	1850.8880	48.8	57.7	73.6
290.0	296	1786.0500	48.6	57.5	73.4
300.0	296	1759.6880	48.5	57.3	73.2
310.0	295	1729.8000	48.3	57.2	73.0
315.0	296	1729.8000	48.4	57.2	73.1
320.0	295	1729.8000	48.3	57.2	73.0
330.0	294	-1729.8000	48.2	57.1	72.9
340.0	293	1759.6880	48.3	57.2	73.0
350.0	293	1786.0500	48.4	57.3	73.1

RUDOLPH BERGMANN & ASSOCIATES, INC.

10-1-67